

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:**Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-022485**Date Inspected:** 07-Apr-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** See Report Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Orthotropic Box Girders**Summary of Items Observed:**

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the project site and observed the following work performed by American Bridge/Fluor Enterprises (AB/F) personnel at the locations noted below:

- A). Longitudinal "A" Deck Stiffeners
- B). QC Ultrasonic Testing
- C). QC Inspection Request

The QA Inspector observed the onsite inspection performed by the contractor's QC Inspection personnel. The inspection was performed on various field fit-up of weld joints and the Complete Joint Penetration (CJP) groove welds of the west Orthotropic Box Girders (OBG's). The welding was performed utilizing the Shielded Metal Arc Welding (SMAW) process as per the Welding Procedure Specifications (WPS's).

**A). Longitudinal "A" Deck Stiffeners**

The QA Inspector observed the CJP welding of the longitudinal stiffeners located at the field splices W7/W8 and W8/W9 identified as WN: 9W-10W-A-LS6 and WN: 8W-9W-A-LS3. The welding was performed by the welders Xiao Jian Wan ID-9677 and Jin Pei Wang ID-7299 utilizing the WPS identified as ABF-WPS-D15-1012-3, Rev. 0. The welding parameters were verified by the QC inspector Gary Ehram and appeared to comply with the contract specifications. The CJP welding of the stiffeners were not completed during this shift.

The QAI also observed the CJP welding of the longitudinal stiffener located at the deck access hole identified as

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WN: 5W-PP29.5-W5-LSE. The welding was performed by Wai Kitlai ID-2953 utilizing the WPS identified as ABF-WPS-D15-1012-3, Rev. 0. The welding parameters were verified by the QC inspector Gary Ehram and appeared to comply with the contract specifications.

### B). QC Ultrasonic Testing

The QAI also observed the Ultrasonic Testing (UT) of the "A" deck field splice identified as WN: 10W-11W-A1. The testing was performed by the QC technician's Jesse Cayabyab and John Pagliero utilizing a G.E./Krautkramer USM 35X. The examination was conducted utilizing UT Procedure identified as SE-UT-D1.5-CT-100 Rev.4 and the applicable contract documents. The QC technician's performed a lamination scan for base metal soundness utilizing the longitudinal wave technique and the shear wave technique for the examination of weld soundness. The testing of the CJP was not completed during this shift.

### C). QC Inspection Request

At the request of the Quality Control lead inspector, Bonifacio Daquinag Jr., the QAI randomly verified the QC visual inspection of the CJP welding identified as WN: 5W-6W-A-LS1 through LS6 and WN: 6W-7W-A-LS1 through LS6. The QAI verification was performed to verify the welding and the visual weld inspection performed by the QC inspector meet the requirements of the contract documents. At the conclusion of the QAI verification it appeared that the welds and the QC inspection complies with the contract documents.

This QA Inspector also performed a daily review and update of the field document control tracking records regarding the Orthotropic Box Girders, Longitudinal and Transverse "A" Deck Stiffeners and Deck Access Holes.

### QA Summary

The welding was performed in the vertical (3G) position utilizing the E7018-H4R and E9018-H4R low hydrogen electrodes. The 3.2 mm electrodes were stored in electrically heated, thermostatically controlled oven after removal from the sealed containers. The exposure limits of the electrodes appeared to comply with the minimum storage oven temperature of 120 degrees Celsius as per the contract documents. The WPS were also utilized by the QC inspector, Gary Ehram as a reference to monitor the welding operation, to verify the welding parameters and verify the minimum preheat and the interpass temperatures. The welding parameters and surface temperatures were verified by the QC inspector's utilizing a Fluke 337 clamp meter for the electrical welding parameters and Tempil Heat Indicators for verifying the preheat and interpass temperatures. At the time of the observation no issues were noted by the QAI.

The digital photographs on page 3 of this report illustrate some of the work observed during this scheduled shift.

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### Summary of Conversations:

There were general conversations with Quality Control Lead Inspector, Bonifacio Daquinag, Jr., at the start of the shift regarding the location of American Bridge/Fluor welding, inspection and N.D.E. testing personnel scheduled for this shift.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

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**Inspected By:** Reyes,Danny

Quality Assurance Inspector

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**Reviewed By:** Levell,Bill

QA Reviewer